

Assessment of Information Technology in Electronic Medical Records Using the Concept Health Technology Assessment at X Jepara Hospital

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Abstract

Hospitals as health service providers need to study the equipment used in health services, which is called a Health Technology Assessment. This research aims to determine the assessment of electronic medical record information technology using the Health Technology Assessment concept at regional General Hospital X Jepara. This research uses a qualitative method with a descriptive design. The research was conducted at the regional general hospital X Jepara which was carried out from March to June 2023. There were 13 informants in this research with 9 main informants and 3 triangulation informants. Data collection techniques use in-depth interviews, observation, and document study. Data analysis for this research is data reduction, data presentation, and conclusion. The results of this research on the concept of effectiveness can increase productivity, be more efficient, make it very easy to publish patient medical records in summary and detail, and doctors and nurses can easily access patient data by logging in using their password. Patient privacy is also maintained with limited access to open it. Service is fast and can increase satisfaction and improve hospital services from an economic perspective using health technology assessment methods. The characteristic aspect of using electronic medical records is that it makes hospital services easier. The security aspect of patient data is guaranteed because system access can only be accessed by users with an account, and the rights of each user are guaranteed. The management of the regional general hospital will easily use electronic medical records and improve the service and quality of Regional General Hospital X Jepara.

Keywords: Electronic medical record, Effectiveness, Economic, Technical characteristic, Security

INTRODUCTION

The hospital has complete facilities and large capital supported by various technologies. Health technology is always being developed to solve health problems and improve the quality of life of humans. This right is an inseparable component of the health care system which can assist in improving the quality and safety of patients, including the organization and system in which the health service is administered (Herndon et al., 2007; Kruk et al., 2018).

Effective and efficient health technology depends on management policies while the selection is based on scientific evidence and best practices for its management and use (Polisena et al., 2019). Technology has been applied in various fields including the health sector. Technology is designed to provide economic benefits but requires large capital investments. The decision to implement a technology in a hospital needs to be considered because of all the funding for investment and operational costs that will arise in the future (Coye et al., 2006).

The application of technology in health facilities affects every process in management, decision-making, and review of quality and service (Hatton et al., 2013). Hospital management in deciding on the use of health technology including information technology can show; first, technology is often accepted and used without prior assessment; second, technology is used before the assessment is completed; third, the available technology is excessive compared to the needs of society; fourth, technology that is accessed according to its use after being applied which is not by the results of the assessment (David et al., 2005); (Stoumpos et al., 2023)

Hospitals, as health service providers, need to study the equipment used in health services, called the health technology assessment. This study needs to consider several aspects, including technical characteristics, safety, efficacy, effectiveness, economic aspects, and social, ethical, legal, political, and religious aspects. The medical profession is important in clinical effectiveness analysis, while the management and directors are in the economic field. At the same time, the government, in this case, the Ministry of Health and the Health Service as policymakers and regulators, play a role in analyzing the impact on the healthcare system, including patient safety (Kemenkes RI, 2017). In this case, the health technology assessment can assess the impact and benefits of the technology used in the health sector. One of the technologies used in the health sector is electronic medical records (Ming et al., 2022).

According to the regulation of the Minister of Health of the Republic of Indonesia number 269 of 2008, medical records must be made in writing, complete and clear or electronically. Electronic medical records are the form of information technology advancement in the health sector. The benefits that can be obtained include economic aspects such as cost savings, cost avoidance, increased revenue, contribution to profits and increased productivity; clinical aspects such as facilitating access to clinical information, namely in the form of medical history data for patient follow-up consultations; reduce errors in providing services; improve patient safety, provide educational services that can be tailored to patient needs so that they can be easily conveyed, improved documentation, and aspects of access to information such as communication between doctors and patients are well established; assist in clinical decision-making processes based on guidelines and protocols.

In addition to providing convenience for the coordination of care and support in the measurement process of service quality, reporting and quality improvement (Amatayakul, 2009). The use of technology in the implementation of Electronic Medical Records must be adjusted to medical needs after the results of the health technology assessment in order to control costs without reducing the quality of hospital services (Putri et al., 2022). Many procurements of technology in health owned by hospitals are not calculated properly, so

hospitals do not know the benefits or benefits to management. So it is necessary to have a study to find out how much the benefits and advantages of the economic aspect are owned by a hospital (Dwijosusilo et al., 2018).

Cost and benefit analysis is needed to evaluate investments in electronic medical record information technology by comparing the value of use before using electronic medical records and after using them. In this research, a technology assessment will be carried out using the concept of health technology assessment from the effectiveness, economic, technical characteristics, and safety aspects at the X Jepara regional general hospital

METHOD

The type of research that researchers use is qualitative research with a descriptive approach. The research was conducted at regional general hospital X Jepara, which was carried out from March to June 2023.

There were 13 informants in this study consisting of 3 main informants from the medical records unit staff, 1 person from the information and technology unit, 1 specialist doctor, 1 general practitioner and 3 nurses or midwives. Meanwhile, there were 4 supporting informants, consisting of 1 head of the medical records unit, 1 head of the logistics unit, 1 head of the medical services section and 1 person as the hospital director.

The collection technique for this research is in-depth interviews or in-depth interviews), apart from observation interviews which are also used in this research collection technique, observations are carried out to obtain a real picture of an event or event at the research location and document study is used as a data collection technique by analyzing documents in the form of documentation or reports related to existing research problems at regional general hospital X Jepara.

The data collection procedure in this research used primary data which was carried out through in-depth interviews with main and supporting informants, guided by an interview guide and recorded using a recording device and writing equipment. Meanwhile, secondary data was obtained from medical record report data at the X Jepara regional general hospital.

Data validity techniques must be implemented to ensure research efforts can truly be accounted for. In this research, data triangulation was carried out, a data validity checking technique that uses something other than the data to check or compare the data or documents obtained. The validity of the data that has been collected is maintained by means of data triangulation. Analysis of research data by data reduction, data presentation and concluding.

RESULT

The characteristics of the informants in this study can be seen as follows

Table 1. Main Informant Characteristics

Informant Code	Gender	Age	Last Education	Years of Service	Position
I1	Women	37 years old	General practitioners	12 years	Head of Medical Services Department
I2	Men	25 years old	Bachelor of Information Technology	2 years	Procurement staff
I3	Women	40 years old	Medical record diploma	15 years	Head of Medical Records Unit
I4	Men	27 years old	Bachelor	6 months	Doctor's Electronic Medical Record User
I5	Women	25 years old	Bachelor of Midwifery	5 years	Midwife electronic medical record users
I6	Women	42 years old	Bachelor of Nursing		Nurse RME electronic medical record users

In this study, triangulation of informants was also determined to test the validity of the data obtained from the main informants:

Table 2. Characteristics of Triangulated Informants

Triangulated Informant Code	Gender	Age	Last Education	Years of Service	Position
I1	Men	40 years old	Master of Occupational Safety and Health	1 year	Director
I2	Women	50 years old	Bachelor of Social Sciences	20 years	Head of Procurement Department
I3	Men	30 years old	general practitioners	5 years	Head of Medical Records Committee

The results presented in this research are about the evaluation of electronic medical record information technology using the health technology assessment concept at X Jepara Hospital using the health technology assessment method. The concept of health technology assessment includes the assessment of various aspects of the use of all health technologies, namely :

Effectiveness Aspect

The following are excerpts from an interview with the head of the medical records section regarding the use of electronic medical record users:

"…..When using a manual medical record, several indicators of the quality of hospital services are often not achieved, namely the waiting time for taking the medical record document, so that some patients can extend the service time, besides that if there are documents lost, so doctors or other service providers cannot see the history previous patients, and many other things including pharmaceutical services (I1).

"….In contrast to using electronic medical records, which do not require much time in providing or opening patient medical record documents, doctors and other medical and supporting staff can easily record medical records in the electronic medical record system. In addition, doctors can also directly connect with other units.

"….So, in general the use of the effectiveness of the use of electronic medical records greatly affects all lines of service for the better. Of course, this will impact hospital management, for example in terms of hospital performance and finances.

"….. yes, electronic medical record clearly increases productivity, the better the service, the customer will also be satisfied, so we feel an increase in patient visits. For example, with the online registration system (I1)

Based on the observation of the effectiveness aspect carried out to see the service time required when starting registration, the time to provide inpatient and outpatient medical records is less than 15 minutes, along with the completeness of filling out the medical record, it was found that electronic medical record outpatient registration services 1 users started from 08.42 – 09.00 with complete filling in. electronic medical record outpatient registration services users from 14.10 – 14 20 with complete charging equipment. Doctor's electronic medical record users starting from 10.30 – 10.45 complete filling. Nurse electronic medical record users start from 10.15 – 10.30 with complete filling equipment.

The following is an excerpt of an interview with the head of the medical record unit regarding the use of electronic medical record users.

…" Having electronic medical record makes it easier for us to record patient data.

…" there is a time difference, but electronic medical records don't take that long.

…"so far, it may be less effective in increasing patient satisfaction".

The following are excerpts of interviews with Doctors, Midwives, Nurses who use electronic medical record regarding electronic medical record users on the aspect of effectiveness:

… "Yes, it makes it easy to access patient information such as the patient's travel history, medication history given to the patient and other things that assist in the patient's treatment process". (I4, I5, I6)

… "Yes, if using conventional medical records it takes 15 to 20 minutes in terms of providing patient medical records, with electronic medical record can be accessed directly in just a few minutes" (I4, I5, I6)

Based on excerpts from the results of in-depth interviews with key informants, it was concluded that in line with triangulation informants that the use of electronic medical record: can increase productivity, be more efficient, very easy to issue patient medical records both in summary and detail, and doctors and nurses can easily access patient data through login using the password it has, the patient's privacy is also maintained with limited access to open it. Service is fast and can increase satisfaction and hospital services for the better. It is hoped that it will also provide the best for the future, with maximum service, although at this time it is still unclear whether electronic medical record will really make it easier or vice versa.

Economic Aspect

The following are excerpts from an interview with the head of the medical record section regarding the economic aspects of electronic medical record users

…" Calculating the cost of paper and storage shelves related to the implementation of manual medical records and when using electronic medical records.

…" Previously, the hospital created a hospital management information system team consisting of medical record and information and technology, then this team made a proposal related to infrastructure related to the procurement of the electronic medical record system in the hospital. Then, the procurement department will make a plan related to the financing of electronic medical records.

…" The hospital has included the hospital management information system, electronic medical record procurement plan in the strategic plan. However, in this case the management is less thorough in the vendor's readiness for implementation in the hospital".

… "Manual medical records require paper, storage racks, other office stationery and also storage space. On average, we spend 50-60 million per year on paper costs, adding 3 large shelves per year around 15 million, for other office stationery such as bullpens, labels spend 15-20 million per year, for space in this hospital it has two separate storage rooms. At this time using electronic medical record a lot of savings. The cost of paper is currently reduced to 20-30 million, the provision of shelves has not been available this year, there are still two storage spaces, however, there is no need to add more, for office stationery expenses, it has decreased by around 8-10 million per year".

Based on the economic aspect, the initial use of electronic medical record at regional public hospital X Jepara requires a lot of money by requiring a lot of supporting tools with preparations such as hardware, network upgrades, several computers with old systems that require upgrading of some hardware and network systems, but this will make it easier to continue. In essence, the initial electronic medical record will indeed require a lot of money to complete all the preparations needed to implement the electronic medical record system, but electronic medical record productivity will simplify all aspects of service and will reduce expenses afterwards.

The use of electronic medical records at regional public hospital X Jepara, based on interviews with the head of the medical records section, concluded that electronic medical records were very efficient for facilities and infrastructure but had some initial problems that also disrupted service because of the maximum effort from the collaborating hospital vendors. However, the system that has been implemented is running well and professionally. The influence of electronic medical records in all aspects is very visible and very influential because it doesn't require printing the results, and the results can be stored as long as we want; it's just that we need periodic backups to keep the data from being lost at any time. The use of electronic medical record at regional public hospital X Jepara has only been running for one year, so there are still a lot of adjustments that must be made, so for now it is still said that electronic medical record, which has been running for year, still does not provide maximum convenience because there is still a lot of spending on funds for adjustments and repairs, but it is hoped that in the future it will be able to provide a good effect for future hospital cashflow.

Based on the results of interviews with key informants, it is also in line with the results of interviews with triangulation informants who stated that for the economic aspect, the use of electronic medical records at the beginning cost quite a lot by the procurement and financial planning of the hospital, because the transition from manual medical record to electronic

medical record was just beginning. planning from the start such as providing the required electronics, providing computer technician fees, HR training needs to be related to electronic medical record which will be very different, with other risks when there are obstacles in implementation, this will be difficult at the start, but will be very effective in supporting service quality hospital for outpatients, because it will greatly save waiting time, data storage that triangulation informants can directly access, patient data storage that doesn't need to take up space, and many other positive things, but all do need process and time to be stable in use of electronic medical record from manual medical record switching.

Based on the calculation of costs incurred per patient in the outpatient unit, assuming the hospital uses a manual medical record document:

Material Costs

Table 3. Material Costs

Type	Fee	Information
Medical Record Map	IDR 3200	New Patient
Print the medical records form	IDR 135	Per page
Stationery (Ink, Staple)	IDR 135	Per patient

Based on the table above, the material costs for new patients are IDR 3470, -and old patients IDR 270, -, it can be concluded that if for example in a day there are approximately 100 old patients and 50 new patients, you will get expenses for material costs of around IDR 173.500 for old patients and IDR 27.000 for new patients.

Labor costs

- **Medical records Clerk Fees**

  Based on the calculation above, the medical records officer takes 15 minutes per patient for service. So that the receipt of fees/salary for officers in a month with the assumption of the minimum wage above, each patient requires an expenditure of IDR 6094.

- **Nurse Fees**

  Based on the data obtained from the observation results, it is assumed that nurses with a salary of 1.5x the regency or city minimum wage which is estimated to reach IDR 6.325,809, nurses spend 2 minutes writing patient medical records. Thus, it can be assumed that the estimated cost of medical records for each patient from the nurse is IDR 1.219

Total Patient Cost

Based on the description of material costs and labor costs, we can total medical records costs per patient of IDR 33.833 per patient consisting of IDR 270 for material costs and IDR 33.563 for labor costs.

If it is assumed that Jepara X Hospital will later become a type C hospital with IDR 5.000 outpatients per month, then it can be seen that the medical records costs per month can reach IDR 167.815.000 assuming working hours in one month are 173 hours.

Electronic medical record needs at the beginning of the procurement quite a lot reached IDR 284.700.000 for hardware needs only, but in the future it will be very easy and you don't need to pay a lot of money anymore because the use of electronic medical record will greatly facilitate and relieve the hospital.

The budget for the investment plan for the hospital management information system procurement totals IDR 1.086.984.000. Judging from the total cost, it is indeed very large, but this is a good investment for X Jepara Hospital, which is to facilitate labour and maximize service in order to increase patient satisfaction and service quality.

Aspects of technical characteristics (ease of use)

The following are excerpts from an interview with the head of the medical record section regarding the technical characteristics of electronic medical record users :

... "currently we are experiencing some problems regarding this system, there are lots of adjustments regarding features and also items contained in electronic medical record. Many adjustments or changes must be made because of discrepancies with previous manual medical recorded items. Because many windows that have to be opened end up taking longer so it can be concluded that the use of electronic medical record has not been able to provide ease of use".

…"facilitating coordination between units, so that management can directly monitor service activities in all units. For billing calculations are also better. Currently, there is an improvement in the quality of service. Also, all the documentation is more complete".

…"for the beginning a lot of customization items, because the vendor is less experienced. The level of success is also determined by the vendor and its hardware and software facilities"

Based on the results of interviews that have been conducted with key informants from the use of electronic medical record from the aspect of technical characteristics (ease of use) it is found that there are still several obstacles related to the system in electronic medical record which must be adjusted because it has only been running for only a few months, there are still some obstacles, but coordination has been carried out with a technical team that can assist and directly monitor service activities in all units. From the results of observations which were also carried out with four participants, namely: outpatient registration services 1, outpatient registration services 2, Doctors and Nurses using assessment sheets on aspects of the characteristics of the electronic medical record technique, outpatient registration services 1 and 2 assessed that the characteristics of the electronic medical record technique for the contents were good, accuracy is good, the format is good, the relevance is still not good, and the ease of use is still not good, while doctors and nurses think that the content is good, the accuracy is still not good, the format is good, the relevance and convenience are still not good.

This is also in line with interviews that have been conducted with the triangulation team who said the same thing about aspects of technical characteristics, electronic medical record can be said to make it easier for hospital services, especially medical records but still has some obstacles, for example related to the network but the use of the system has been regulated. by technicians and there's no need to worry, for now everything is sufficient for all tennis and facilities, but more needs to be done to make it more effective and better patient service.

Security Aspect

The following are excerpts from an interview with the head of the medical record section regarding the technical characteristics of electronic medical records users.

... “yes, RS makes policies, guidelines and standard operational procedures in implementing this electronic medical record.

... “there, username and password for each user.

... “for digital signers is not currently available

...“The hospital has a team for this, so we continuously provide assistance.

... “no, the system can only be accessed by users who have accounts and the access rights for each user are also different.

…" yes, hospitals have policies along with guidelines and standard operational procedures

... "yes, there is the hospital has an standard operational procedures in terms of backing up data, in this case the IT hospital is responsible for backing up data,

This is in line with the results of interviews with triangulation informants (Director, Head of Procurement Section, Head of the Medical Record Committee as follows:

... "yes, in accordance with the SOP" (IT1, IT2, IT3)

... "there, username and password for each user" (IT1, IT2, IT3)

... "not yet available (IT1, IT2, IT3)

..."there is a team that will guide and direct" (IT1, IT2, IT3)

... "no, the system can only be accessed by users who have accounts and access rights for each user are also different" (IT1, IT2, IT3)

…" yes, the policy is in accordance with the SOP" (IT1, IT2, IT3)

... "yes, there is, the hospital has SOP" (IT1, IT2, IT3).

Based on the results of interviews with key informants and this is also in line with the triangulation informants who stated that the safety of using electronic medical record such as patient data is very secure because access to the system can only be accessed by users who have accounts and the rights of each user also vary as the triangulation informant has explained this, this was also reinforced by key informants such as the head of the medical records unit that not all staff can access it because there is a username and password to be able to enter and view the required data, this also means that each user has different rights - it is different for its use, and for all data data backup is also carried out because for example there are constraints that all data will not be lost, even if existing data is lost, it has been backed up and can be restored. Everything that is done must also be by the hospital standard operational procedures, and data backup cannot be arbitrary because it is confidential data or patient privacy. So, for security from the use of electronic medical record it is said to be safe according to the existing standard operational procedures.

DISCUSSION

An electronic medical record or computer-based medical record is an electronic storage place for information about the health status and health services received by the patient throughout his life, stored in such a way that it can serve various valid medical records. Users of electronic medical records must also include personal, demographic, social, clinical data and various clinical events during the service process from various data or multimedia sources and function actively to provide support for medical decision making (Latipah et al., 2021; Ningsih et al., 2022).

The use of electronic medical records produces a system that specifically facilitates various conveniences for users, such as data completeness processes, warnings, clinical decision support systems and data linking with medical knowledge and other tools. (Brown, 2012; Maryani et al., 2022). The use of electronic medical records has proven to simplify and increase productivity greatly, because patients or customers also feel very satisfied, no longer needing to queue for too long to retrieve numbers and status lists, as well as service providers such as doctors no longer have to repeatedly open documents just by one look can immediately determine the patient's status, so it can be concluded that the use of electronic medical records is very effective and productive in helping services in hospitals (Rohman et al., 2019).

The use of health technology has a huge impact - with wide variations - on both microeconomic and macroeconomic aspects. In the microeconomic aspect, including costs, prices, and payments related to the use of technology. For example, it can be calculated how much the average cost is incurred each year for managing a thalassemia patient who requires routine transfusions; This can be assessed with a cost of illness analysis. Economic analysis can also compare the costs required between two or more technology uses with the outputs obtained, including cost minimization, cost benefits, cost-effectiveness, and cost-utility analysis (Kemenkes RI, 2017).

Based on research results, the concept of health technology assessment in the aspect of effectiveness at X Jepara Hospital can increase productivity and be more efficient. It is very easy to issue patient medical records both in summary and in detail, and doctors and nurses can easily access patient data via login. Using the password they have, patient privacy is also maintained with limited access to open it. Service is fast and can increase satisfaction and improve hospital service.

The concept of health technology assessment on the economic aspect of the use of electronic medical records at X Jepara Hospital initially cost quite a lot of money by the hospital's procurement and financial planning, because the transition from manual medical records to electronic medical records needed planning. initial requirements such as providing the required electronics, providing costs for computer technicians, human resource training needs related to electronic medical records which will be very different, with other risks which when there are obstacles in implementation, this will feel heavy at the start, but will be very effective in supporting quality of hospital services for outpatients, because it will greatly save waiting time, data storage that triangulation informants can directly access, patient data storage that does not need to take up space, and many other positive things, but all of this requires a process and time to be achieved. Stable in the use of electronic medical records, switching from manual medical records.

The concept of health technology assessment in the security aspect at the X Jepara hospital. The security of using electronic medical records, such as patient data, is highly secure because access to the system can only be accessed by users with an account and, each user's rights are also different as has b,een explained. by the triangulation informant, this was also reinforced by the main informant such as the head of the medical records unit that not all staff can access because there is a username and password to be able to enter and view the required data, this also means that each user has different rights to usage, and for all data, data backup is also carried out because, for example, if there is a problem, all data will not be lost, even if existing data is lost, it has been backed up and can be restored.

The concept of health technology assessment on the characteristic aspects of the X Jepara hospital, electronic medical records can be said to be something that makes hospital services easier, especially medical records, but it still has several obstacles, for example, related to the network, but technicians have regulated the use of the system and there is no need to worry, for now This is sufficient for all tennis and facilities, but more is still needed to make it more effective and provide better patient care.

Effectiveness is a measure of success or failure in achieving an organisation's goals (Siregar et al., 2019). If an organization achieves its goals, then the organization has operated effectively. Effectiveness indicators describe the range of program output effects and impacts or outcomes in achieving program goals. The greater the contribution of the product produced

to achieving predetermined goals or targets, the more efficient the work process of an organizational unit will be (Anis et al., 2021).

The effectiveness of using electronic medical records for effective outpatient services is very helpful in providing services to patients. However, this research needs to explain the effect of using electronic medical records so the author examines how big the effect of using electronic medical records is on increasing the effectiveness of outpatient services. (Lombi et al., 2022; Triadi et al., 2023).

Previous research also showed the results of research that before using the My Klinik Application at the Darul Arqam Clinic in Garut, the services provided to patients took a relatively long time so patients had to be patient in waiting in line for treatment, and after using the My Clinic Application the level of difference could be seen. from the process of officers providing services to patients who come for treatment. In research, Electronic Medical Records is very effective and can help the service delivery process (Farid et al., 2021).

Technical characteristics, especially medical devices for both diagnostic purposes (MRI, CT-scan, hybrid angiocardiography) and therapy (stents, hearing aids, devices for closing congenital heart defects) need attention. However, for this purpose, it is rarely reviewed on the spot. The assumption is that the equipment manufacturers and the hospitals/doctors who use them want the equipment to function properly so that proper maintenance is always carried out. However, for medical equipment in small hospitals, especially those far from the centre, it is necessary to consider whether the requirements have carried out the specifications, indications for use, maintenance, and necessary calibration. The calibrationDiagnostic tool calibration must be monitored by all parties involved (Kemenkes RI, 2017).

The safety of using medical technology such as drugs, tools, procedures, etc. Direct observation, routine reports from hospitals, case reports in the literature, or reports of side effects in clinical trials can be obtained. It should be noted that clinical trials usually only include a few hundred or even a few tens of subjects, so it is rare for examples to occur in 1 in 2000 patients (David et al., 2005; David et al., 2018).

It should be remembered that safety is assessed for patients, service providers, and the environment. Things that require special attention are tools with X-ray components and nuclear materials. Utilization of this technology must 100% meet the requirements both set by the tool maker and the requirements set by the authorized agency or institution (Kemenkes RI, 2017).

Based on previous research, the results showed that security policies were found, while standard operating procedures related to security and confidentiality of medical records had not been made. The physical medical record does not guarantee the security and confidentiality of the contents of the medical record. The medical record storage room does not guarantee the safety of medical record storage. It is better if the management of Setia Mitra Hospital can reiterate that there is a policy that has been established regarding the security and confidentiality of medical records, besides that a standard operational procedure is made regarding the security and confidentiality of medical records (Siswati et al., 2019).

The role of medical record officers, doctors and nurses in maintaining the confidentiality of medical records in accordance with established standard operating procedures. Based on the Indonesian Republic of Law Number 29 of 2004 concerning Medical Practice Article 47 paragraph 2,, medical records must be kept confidential by doctors, dentists and leaders of health service facilities (Undang-Undang RI No.29, 2004).

CONCLUSION

The conclusion from the results of this research is that the health technology assessment concept from the aspect of the effectiveness of patient privacy in hospitals is also maintained with limited access to open it. Fast service can increase satisfaction and better hospital service. The economic aspect of the health technology assessment concept using electronic medical records at X Jepara Hospital initially required quite large costs by the hospital's procurement and financial planning. The health technology assesment concept in the security aspect in hospitals. Not all officers can access it because there is a username and password to enter and view the required data. This means that each user has different usage rights, and all data is backed up so that if there is a problem, all data will be recovered. Even if existing data is lost, it is backed up and can be restored. The health technology assessment concept in the electronic medical record characteristics Aspect of X Jepara Hospital can be said to facilitate hospital services, especially medical records, but still has several obstacles.

In the future, it is hoped that we will be able to provide the best with maximum service. However, ,it is still at with the relatively high costs, we can try to find a better solution so that Jepara can be reduced unclear whether electronic medical recordsrecords will make things easier or vice versa. It is hoped thbecause just click, the documents are available, and the time for filling in by health workers can be shortened because some medical record data can already

be filled in. automatically. This additional time can be used to serve more patients and improve the quality of service to patients.

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